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KYOCERA WIRELESS, CORP.				
P.O. BOX 928289				
SAN DIEGO, CA 92192-8289				
		EXAMINER		
		IQBAL, KHAWAR		
		ART UNIT		
		PAPER NUMBER		
		2686		
		DATE MAILED: 02/18/2004		

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/898,269

Applicant(s)

FORRESTER, TIMOTHY DAVID

Examiner

Khawar Iqbal

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 15-20,24-28 are rejected under 35 U.S.C. 102(e) as being unpatentable by Kemmochi (20020183016).

3. Regarding claim 15 Kemmochi teaches a wireless communications device, comprising (figs. 10,11):

an antenna (figs.10, 11);

a diplexer coupled to the antenna (paragraph # 0089, figs. 10,11); a switching module coupled to the diplexer (paragraph # 0089, figs. 10,11);

a global positioning system (GPS) module coupled to the switching module (paragraph # 0089,0091,0131 figs. 10,11);

and a personal communications service (PCS) band diplexer coupled to the switching module, wherein the switching module is adapted to switch GPS band signals to the GPS module and PCS band signals to the PCS band diplexer (paragraph # 0089,0093,0131, figs. 10,11);

Regarding claim 16 Kemmochi teaches a cellular band diplexer coupled to the diplexer

Regarding claim 17 Kemmochi teaches wherein the diplexer is adapted to couple cellular band signals to the cellular band diplexer (paragraph # 0089,0093).

Regarding claim 18 Kemmochi teaches wherein the diplexer is adapted to couple PCS band signals to the switching module(paragraph # 0089,0093).

Regarding claims 19,20 Kemmochi teaches wherein the diplexer is adapted to couple GPS band signals to the switching module with attenuation (paragraph # 0089,0093,0131).

Regarding claims 24,25 Kemmochi teaches wherein the diplexer includes a high pass frequency response with a cutoff frequency at approximately 1600 MHz (paragraph # 0089,0091).

Regarding claim 26 Kemmochi teaches wherein the diplexer provides GPS band signals to the switching module with less attenuation than if the diplexer included the high pass frequency response with the cutoff frequency at approximately 1600 MHz (paragraph # 0089,0093,0131).

Regarding claims 27,28 Kemmochi teaches wherein the diplexer includes a high pass frequency response with a cutoff frequency designed to reduce attenuation Of the GPS band signals (paragraph # 0089,0093,0131).

4. Claims 29-35 are rejected under 35 U.S.C. 102(e) as being unpatentable by Kim (20020207033).

Art Unit: 2686

5. Regarding claim 29 Kim teaches a method for providing a global positioning system (GPS) enabled antenna, comprising the steps of (fig. 2):

providing an antenna tuned to receive a wireless communications signal in a communications band (paragraph # 0011, 0019);

receiving at the antenna a wireless communications signal (paragraph # 0011, 0019);

receiving at the same antenna a GPS signal (paragraph # 0011, 0019);

propagating a combined signal to a switching module, the combined signal including the GPS signal and the wireless communications signal (paragraph # 0011, 0019);

switching, via the switching module, the combined signal to a GPS module (paragraph # 0011, 0019); and

extracting the GPS signal from the combined signal using the GPS module (paragraph # 0011, 0019).

Regarding claims 30,31 Kim teaches wherein the extracting step further includes matching an impedance at approximately the frequency of the GPS signal (paragraph # 0011, 0019, 0020).

Regarding claims 32,35 Kim teaches a method for providing a global positioning system (GPS) enabled antenna, comprising the steps of (fig. 2):

receiving a wireless communications signal from at least one communications band (paragraph # 0011, 0019);

(b) coupling, via a triplexer, GPS band signals of the wireless communications signal to a GPS module (paragraph # 0011, 0019);

(c) coupling, via the triplexer, first band signals of the wireless communications signal to the first band duplexer (paragraph # 0011, 0019); and

(d) coupling, via the triplexer, second band signals of the wireless communications signal to the second band duplexer (paragraph # 0011, 0019).

Regarding claim 34 Kim teaches includes the step of coupling, via the triplexer, cellular band signals of the wireless communications signal to the cellular band duplexer (paragraph # 0011, 0019).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-14,22-23 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kemmochi et al (20020183016) and further in view of Lindemann et al (6553210).

8. Regarding claims 1,8-10 and 33 Kemmochi et al teaches a system for providing a GPS enabled antenna, comprising (figs. 10,11):

an antenna; a switching module coupled to the antenna (paragraph # 0089,0093, figs. 10,11);

a global positioning system module coupled to the switching module (paragraph # 0089,0093,0131, figs. 10,11); and

wherein the switching module is adapted to selectively couple the antenna to the GPS module (paragraph # 0089,0091,0093,0131). Kemmochi et al does not specifically teach an impedance matching circuit in the GPS module constructed to match impedance at approximately a GPS signal frequency.

In an analogous art, Lindemann et al teaches an impedance matching circuit in the GPS module constructed to match impedance at approximately a GPS signal frequency (col. 7, lines 1-13). Usage method for single antenna for simultaneously receiving radio frequency signals in different bands, involves combining energy in two received signals into global positioning system navigation data radio frequency band output signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Kemmochi et al by specifically adding feature impedance matching to provide for impedance matching during GPS reception in order to enhance system performance of the system purpose of increasing efficiency of multi-band frequency signals as taught by Lindemann et al.

Regarding claim 2 Kemmochi et al teaches further comprising: a diplexer coupled between the antenna and the switching module, wherein the antenna is constructed as a dual-band antenna (paragraph # 0089,0093).

Regarding claim 3 Kemmochi et al teaches wherein the diplexer is adapted to couple first band signals to a first band duplexer and second band signals to a second band duplexer (paragraph # 0089,0093).

Regarding claim 4 Kemmochi et al teaches wherein the second band signals are cellular band signals (paragraph # 0089,0093).

Regarding claim 5 Kemmochi et al teaches wherein the second band signals are band signals at approximately 800 MHz (paragraph # 0089,0093).

Regarding claim 6 Kemmochi et al teaches wherein the first band signals are personal communications service (PCS) band signals (paragraph # 0089,0093).

Regarding claim 7 Kemmochi et al teaches wherein the first band signals are band signals at approximately 1900 MHz (paragraph # 0089,0093,0131).

Regarding claims 11,12 Kemmochi et al teaches wherein the switching module includes a two-way switch (paragraph # 0089,0093 figs. 10,11).

Regarding claims 13.14 Kemmochi et al teaches wherein the switching module includes a three-way switch (paragraph # 0089,0093, figs. 10,11).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Peterzell (20020163391), Dent et al (20020101907), Hajimiri et al (20020173337) and Glocker (6317608) teach R/T signals multi band with GPS.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHAWAR IQBAL whose telephone number is 703-306-3015.

Art Unit: 2686

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **BANKS-HAROLD, MARSHA**, can be reached at 703-305-4379.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2684 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Khawar Iqbal



Marsha D Banks-Harold

MARSHA D. BANKS-HAROLD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600